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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,775	01/23/2006	Nigel Paul Schofield	M02B160	2847

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EXAMINER	
BOBISH, CHRISTOPHER S	
ART UNIT	**PAPER NUMBER**
3746	

NOTIFICATION DATE	DELIVERY MODE
05/26/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LORETTA.SANDOVAL@EDWARDSVACUUM.COM

Office Action Summary	Application No.	Applicant(s)	
	10/536,775	SCHOFIELD, NIGEL PAUL	
	Examiner	Art Unit	
	CHRISTOPHER BOBISH	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendments filed on 02/03/2010 have been considered and are persuasive to overcome the Abbel and Maher references applied in the previous rejection.

Claims 1-17 are pending and have been examined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9 and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen (US Patent No. 4,577,465) in view of Stones (US Patent No. 6,135,709).

Olsen teaches:

limitations from claims 1 and 8-9, a vacuum pumping system and method having a vacuum pumping arrangement (see FIG. 1) comprising: an evacuation means (38) for evacuating at least a pumping means (20) to a predetermined pressure prior to start up of the pumping mechanism, operating the pumping means (20) when the predetermined pressured has been obtained (C. 5 Lines 40-60);

wherein the evacuation means (38) is decoupled from the molecular pumping mechanism in a manner that exhaust fluid from the molecular pumping means bypasses the evacuation means during its normal operation of the molecular pumping means (the pump 38 is decoupled from the pump 20 by valves 36 and 42; C. 5 Line 41 through C. 6 Line 5);

Olsen teaches the use of a cryopump as the main vacuum pump in the system, rather than a turbomolecular pump.

Stones teaches:

limitations from claim 1, a vacuum pump arrangement having a molecular pumping mechanism (FIG. 3) comprising turbomolecular pumping means (50); a backing pumping mechanism (1), wherein a drive shaft (the shaft mounted on the rotor 9) driven by a motor (7 from FIG. 1) is for driving the molecular pumping mechanism and the backing mechanism (C. 2 Line 61 to C. 3 Line 20);

It would have been obvious to one of ordinary skill in the art of vacuum pumps at the time of the invention to use a compound turbomolecular vacuum pump as taught by Stones in the system as taught by Olsen in order to improve the operating range of pressures and throughput (see C. 1 Lines 4-7 of Stones).

Olsen further teaches:

limitations from claim 4, wherein an evacuation means (38) comprises an ejector pump (C. 5 Lines 40-60);

limitations from claim 16, wherein the evacuation means (38) is for evacuating the vacuum pumping arrangement (C. 5 Line 41 through C. 6 Line 5);

limitations from claims 2 and 3, wherein the vacuum pumping arrangement forms part of a semiconductor processing assembly (C. 1 Lines 5-20, semiconductor processing involves miniaturization of electric components and is know to operate in clean vacuum chambers), and the evacuation means (38) comprises a pump that is a pump for a load lock chamber (16) of the processing assembly (16-35);

limitations from claim 7, wherein the evacuation means (38) is for evacuating the vacuum pumping arrangement (C. 5 Line 41 through C. 6 Line 5);

limitations from claims 11 and 13, wherein the vacuum pumping arrangement forms part of a semiconductor processing assembly (C. 1 Lines 5-20) having a pump (38) associated therewith which forms the evacuation means, further comprising the steps of connecting the pump to the arrangement (see FIG. 1) and operating the pump to evacuate the turbomolecular pumping means and the vacuum pumping arrangement to the predetermined pressure (C. 5 Line 41 through C. 6 Line 5);

limitations from claim 12, wherein the evacuation means comprises an ejector pump (38) further comprising the steps of connecting the ejector pump to the arrangement (FIG. 1); and operating the ejector pump to evacuate at least the turbomolecular pumping means to the predetermined pressure (C. 5 Line 41 through C. 6 Line 5);

limitations from claims 14 and 17, wherein the predetermined pressure is 500 mbar or less (C. 5 Lines 47-49 discuss the need for pressures of 8 torr or less, which converts to less than 500 mbar);

Olsen and Stones disclose and teach of the system in claim 1.

Stones further teaches:

limitations from claims 5, 6 and 15, wherein the backing pumping mechanism (1) is a regenerative pumping mechanism (C. 3 Lines 16-18); and the molecular pumping mechanism comprises a molecular drag pumping mechanism (2; see C. 3 Lines 14-16);

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen (US Patent No. 4,577,465) in view of Stones (US Patent No. 6,135,709) as applied to claim 8 above, and in further view of Arai et al (US Patent No. 6,474,949 B1).

Olsen and Stones teach and disclose of the vacuum pumping arrangement of claim 8.

Olsen teaches starting a turbo pump while running an evacuation means (38, C. 5 Lines 61-65));

Neither Olsen nor Stones teach limiting the torque of a motor during startup, but Arai does.

Arai teaches:

limitations from claim 10, limiting the torque of a motor (40), (Arai discloses controlling the speed of the motor, it would be obvious that speed and torque are closely related), to avoid an overloaded state, (C. 1 Lines 60-65 and C. 4 Lines 5-21);

It would have been obvious to one having ordinary skill in the art of vacuum pumps at the time of the invention to combine the pump monitoring method as taught by Arai with the operating method taught by Olsen and modified by Stones in order to create a more stable pumping arrangement.

Response to Arguments

Applicant's arguments filed 02/03/2010 have been fully considered but they are not persuasive.

The Olsen reference previously used in a 103 obviousness rejection of claims 4, 12 and 16 has been used in combination with Stones (previously relied upon for independent claims 1 and 8) in order to teach de-coupling a pumping means from an evacuation means in a manner that creates separate exhaust paths. The main pump (20) of Olsen exhausts air drawn from a chamber (14) from an outlet that isn't present in

the drawing; the evacuation pump (38) exhausts air from the arrangement using a flow of motive gas.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER BOBISH whose telephone number is (571)270-5289. The examiner can normally be reached on Monday through Thursday, 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571)272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher Bobish/
Examiner, Art Unit 3746

/Devon C Kramer/
Supervisory Patent Examiner, Art Unit 3746

/C. B./
Examiner, Art Unit 3746